1877MNRAS..37R.259A

On the Visibility of the Unilluminated Portion of the Disk of Venus. By Señor A. T. Arcimis.

I had only one favourable opportunity of observing this phenomenon in the afternoon of June 19, 1876; on the previous and following days the sky was overcast towards the West, and the prevailing high wind caused considerable vibration of the telescope.

At 7^{h} 15^{m} the Sun being slightly obscured by clouds, I could see the planet with the naked eye; the finder enabled me to distinguish perfectly the shape and direction of the crescent. It presented, when viewed through the telescope provided with an eye-piece of 92 diameters, a most beautiful aspect, although it was very difficult to focus, and the image almost invariably was irisated. The concave portion appeared as a broken or undulating line, somewhat similar to the Moon's, and no illuminated or bright cusps were visible on the dark portion.

The two horns were easily distinguishable. They were unequal, the northern being the sharpest. Close to the southern extremity an excavation or indentation of an almost black colour was perceptible. I could not discard the idea that the body under observation was a partially illuminated sphere; and this appearance became more marked when I employed a very faint red modifier. The phenomenon of irradiation seemed to me more striking than the Moon's; that is to say, the bright portion appeared very considerably larger than the dark one.

I had considerable difficulty in perceiving the secondary light, but I succeeded in doing so by employing the well-known device of not sighting it directly, so that the light might impinge on a more impressionable point of the retina. Its colour, to my sight, was greyish, or somewhat violaceous, and extremely faint. It will be well to bear in mind that this colour might be due to a deficient achromatic condition of the telescope.

At 7^{h} 30^{m} both horns appeared to be equal, and from that moment the sky was overcast, and I have since had no further opportunity of observing the planet.

Cadiz,
1876, *December* 30.

Phenomena of Jupiter's Satellites observed at Cadiz. By Señor A. T. Arcimis.

The observations were made with a 4-inch Secretan Refractor and a 92-power eye-piece. The hour of the clock was determined by equal altitudes of the Sun or stars, taken with the sextant and the artificial horizon. The ephemerides are from the *Nautical Almanac* of San Fernando Observatory; the geographical co-ordinates of my Observatory are:—

Lat. N. = 36° 31′ 52″·8
Long. W. Greenwich = 0^{h} 25^{m} 11^{s}·7

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Date of Observation.	Satellite.	Phase.	Mean Solar Time of Observation.	Mean Solar Time from N.A.	Diff.	Remarks.
1876.			h m s	h m s	m s	
April 24	I	D	8 9 4	8 9 2	−0 2	Moon absent; clear sky.
„ 25	II	D	14 43 39	14 43 40	+0 1	do. do.
„ 26	III	D	11 16 55	11 16 52	−0 3	Good observation.
„ 26	III	R	12 58 43	12 58 35	−0 8	do.
May 1	I	D	10 2 53	10 2 51	−0 2	do.
„ 3	III	D	15 15 1	15 14 53	−0 8	Bad definition.
„ 8	I	D	11 56 12	11 56 44	−0 32	Clear sky; Moon bright near planet; satellite very tremulous; I lost it sometimes.
„ 20	II	R	14 16 30	14 16 26	−0 4	Good observation.
„ 24	I	R	12 21 7	12 21 1	−0 6	do.
June 1	III	R	8 51 3	8 51 12	+0 9	Bright Moon.
„ 7	II	R	8 47 40	8 46 46	−0 54	Bright Moon; clear sky.
„ 8	III	D	11 7 28	11 5 40	−1 48	Good observation.
„ 8	III	R	12 48 17	12 50 3	+1 46	do.
„ 9	I	R	10 38 19	10 38 5	−0 14	Good obs.; clear sky.
„ 16	I	R	12 32 21	12 32 28	+0 7	do.
„ 25	I	R	8 57 29	8 55 33	−1 56	Bad obs.; strong wind.
July 2	I	R	10 50 23	10 50 6	−0 17	Good obs.; planet near Moon.
„ 14	III	D	not obs.	6 59 33		
„ 14	III	R	8 49 33	8 46 57	−2 36	Strong wind; telescope vibrates.
„ 16	I	R	14 37 48	14 39 23	+1 35	do do.
„ 16	II	R	11 11 52	11 9 35	−2 17	do. do.
„ 18	I	R	9 14 24	9 8 5	−6 19	Clear sky.
„ 25	I	R	11 1 6	11 2 48	+1 42	Cloudy; planet near horizon.
Aug. 10	II	R	8 23 0	8 21 48	−1 12	Very strong wind; bad observation.
„ 10	I	R	9 21 17	9 20 58	−0 19	do. do.
„ 26	I	R	7 39 16	7 39 11	−0 5	Good observ.; Moon present.
„ 26	III	D	6 53 59	6 53 21	−0 38	Good obs.; twilight.
„ 26	III	R	8 45 42	8 45 9	−0 33	Good observ.; Moon present.

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